

# A CONTRIBUTION TO THE WETLAND FLORA OF SITAPUR DISTRICT, UTTAR PRADESH<sup>1</sup>

J. K. MAHESHWARI<sup>2</sup> AND R. P. S. TOMAR<sup>3</sup>

The paper presents an account of the wetland flora of Sitapur district, Uttar Pradesh. A thorough study of this habitat is of great scientific and economic importance as it supports an appreciable number of endangered species of plants and animals. Further, the wetlands of this district regularly support large number of migratory birds from North European, Arctic and Siberian regions. The district maintains a rich wetland flora and was thoroughly explored during the years 1979-1981. The present study shows that 147 species of angiosperms belonging to 54 families inhabit the lakes, ponds, pools and marshes in the district.

## INTRODUCTION

In India the first comprehensive work on the wetland flora was produced by Biswas and Calder (1937). Since then, a number of workers have presented useful and significant data from different parts of the country. There is no floristic record of the species found in the district in Duthie's Flora of Upper Gangetic Plain (1903-1929). Therefore, a research project entitled 'Flora of Sitapur District, Uttar Pradesh' was taken up by us. A thorough study of the present day wetlands is urgently required as this habitat is of great scientific and economic importance and supports an appreciable number of endangered species of plants and animals. The district was, therefore, thoroughly explored during the years 1979-1981 in different seasons. The present study deals with a detailed floristic survey of the wetland plants of the district. The herbarium specimens of wetlands species collected

during this study are lodged in the herbarium of National Botanical Research Institute, Lucknow (LWG).

The district forms part of the Lucknow division of Uttar Pradesh and is situated in Gomti-Ghaghra Doab, lying between 27° 6' and 27° 54' N and 80° 18' and 81° 24' E. It extends approximately 88 km from north to south and 112 km from east to west. It is bounded on the west and south by the river Gomti which meanders from north-west to south-east separating the district from the district of Hardoi and on the east by the river Ghaghra separating the district from the district of Baharaich. The district is bounded on the north by Kheri district and to the south are the districts of Lucknow and Barabanki which lie between rivers Gomti and Ghaghra. The district forms a part of the Gangetic alluvium. It may be roughly divided into western uplands or the *uparhar* and the eastern lowlands or the *ganjar*. The western uplands which cover two-third of the district is a level tract dissected by a number of small streams. The eastern lowlands consist of the Kewani-Chauka and the Chauka-Ghaghra Doab. The water table is high and the exist-

<sup>1</sup> Accepted January 1982.

<sup>2</sup> Sr. Asstt. Director, National Botanical Research Institute, Lucknow.

<sup>3</sup> Teacher Fellow, National Botanical Research Institute, Lucknow.

ence of several rivulets and numerous streams makes it a damp and moist region, requiring no artificial irrigation for cultivation. During the rainy season, the whole of the tract is submerged with water, 15-250 cm deep. The district is traversed by two big rivers, Gomti and Ghaghra which are mostly perennial except in some low-lying areas.

There are large number of *Jhils* (lakes), tanks and ponds with larger stretches of marshy land. The soil is usually an admixture of clay and sand, known as *dumat* which occurs in the major portion of the uplands (*uparhar*). The monsoon normally advances into the district during the later half of June and withdraws early in October. The average annual rainfall for the district is 974.0 mm. A large per cent of the annual rainfall is received during the monsoon period. January is the coldest month of the year with an average minimum temperature of 8°C. The temperature rises rapidly from the month of March. The months of May and early June constitute the hottest period of the year when day temperature may rise up to 46.0°C. During the monsoon and early post-monsoon period, the relative humidity occurs between 70 and 80 per cent. During the summer period air is very dry, particularly in the afternoon when the relative humidity is sometimes less than 30 per cent.

*Observations:*

The wetland flora of the district shows various types of plant communities and associations. At a number of places, the surface of water is completely covered by plants like *Azolla pinnata* R. Br., *Lemna paucicostata* Hegelm., *Eichhornia crassipes* (Mart.) Solms, *Trapa natans* Linn. var. *bispinosa* (Roxb.) Makino and *Pistia stratiotes* Linn., etc. which form a complete blanket on the surface of

water in ponds, pools and ditches at some time during the year.

There are also a number of plant associations, of which the following are frequently noticeable in the district:—

1. Aquatic Habitat: Associations—
  - A. *Nelumbo*—*Nymphaea* — *Nymphoides*
  - B. *Nymphaea* — *Ludwigia* — *Eleocharis*
  - C. *Sagittaria* — *Ottelia* — *Potamogeton*
  - D. *Utricularia* — *Hydrilla* — *Nymphaea*
2. Marshy Habitats: Associations—
  - A. *Eriocaulon* — *Cyperus* — *Fimbristylis*
  - B. *Ipomoea* — *Hydrolea* — *Ammannia*
  - C. *Scirpus* — *Caesulia* — *Aeschynomene*
  - D. *Typha* — *Phragmites* — *Scirpus*
  - E. *Hygrophila* — *Eclipta* — *Alternanthera*
  - F. *Bacopa* — *Marsilea* — *Monochoria*

ENUMERATION OF THE SPECIES

1. RANUNCULACEAE

1. **Ranunculus sceleratus** Linn. — Occurs commonly in marshy places of the district. Fl. & Fr.: March-June; Local name: Jaldhania; RPST 1030.

2. NYMPHAEACEAE

2. **Nymphaea nouchali** Burm. f. — Occurs commonly in *jhils* and ponds during the rainy season. Fl. & Fr.: Aug.—Oct.; Local name: Kumodini, Kokaveli; RPST 551, 666.
3. **N. stellata** Willd. — Occurs frequently in *jhils* and ponds mixed with *N. nouchali* Burm. f. Fl. & Fr.: Aug.—Oct.; Local name: Kumodini; RPST 828.

3. NELUMBONACEAE

4. **Nelumbo nucifera** Gaertn. — Occurs in *jhils* and ponds during the rainy season. Fl. & Fr.: Aug.—Oct.; Local name: Kamal; RPST 871.

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4. BRASSICACEAE

5. **Coronopus didymus** (Linn.) Sm.—Found commonly in fields and open places on moist soil during winter. Fl. & Fr. : Jan.-April; RPST 1026.

5. CARYOPHYLLACEAE

6. **Stellaria media** (Linn.) Vill. — Found commonly in cultivated fields and in other moist waste lands. Fl. & Fr.: Dec.-March; RPST 1132.

6. PORTULACACEAE

7. **Portulaca oleracea** Linn. — Found commonly as a weed in cultivated fields. Fl. & Fr. : Major part of the year; Local name : Kulfa; RPST 1106.
8. **P. quadrifida** Linn. — Found commonly on moist soil in cultivated fields. Fl. & Fr. : July-Sept.; RPST 1199.

7. TAMARICACEAE

9. **Tamarix dioica** Roxb. — Found commonly in low-lying areas and along sandy river banks. Fl. & Fr. : July-Oct.; Local name : Jhau; RPST 109.

8. ELATINACEAE

10. **Bergia ammannioides** Heyne ex Roth — Found commonly in moist waste places. Fl. & Fr. : Nov.-May; RPST 867.

9. STERCULIACEAE

11. **Melochia corchorifolia** Linn. — Found frequently in marshy places. Fl. & Fr. : July-Sept.; RPST 384, 530.

12. **Pentapetes phoenicea** Linn. — Found commonly as a weed in rice fields and marshy places. Fl. & Fr. : Aug.-Nov.; Local name : Guldupahri; RPST 337.

10. TILIACEAE

13. **Corchorus aestuans** Linn.—Occurs commonly in moist shady places. Fl. & Fr. : Aug.-Nov.; RPST 903.
14. **C. capsularis** Linn. — Found commonly on moist ground. Fl. & Fr. : July-Sept.; Local name : Jute; RPST 989.
15. **C. olitorius** Linn. — Found commonly in moist shady places in cultivated fields and fallow grounds. Fl. & Fr. : Sept.-Oct.; Local name : Jute; RPST 502.

11. FABACEAE

16. **Aeschynomene aspera** Linn. — Found frequently in paddy fields and swampy places. Fl. & Fr. : July-Nov.; RPST 919.
17. **A. indica** Linn. — Occurs commonly in paddy fields and water-logged areas. Fl. & Fr. : July-Nov.; RPST 111.
18. **Derris indica** (Lamk.) Bennet syn. *Pongamia pinnata* (L.) Pierre — Found frequently near rivers, canals and in moist localities. Fl. & Fr. : Dec.-June; RPST 833.
19. **Desmodium triflorum** (Linn.) DC. — Occurs along the banks of canals. Fl.: July-Sept., Fr.: Nov.-Jan.; RPST 107.
20. **Sebania bispinosa** (Jacq.) W.F. Wight — Common along canal banks and also in cultivated fields and swampy places. Fl. & Fr.: Sept.-Oct.; Local name: Dhaincha; RPST 506, 1060.

12. CAESALPINIACEAE

21. **Cassia tora** Linn. — A dominant weed of rainy season; found commonly along

roadsides, railway tracks and in waste grounds. Fl. & Fr. : Aug.-Nov.; Local name : Panwar; RPST 314.

13. ROSACEAE

22. **Potentilla supina** Linn. — Occurs commonly in marshy and muddy places. Fl. & Fr. : Jan-April; RPST 1952.

14. MYRTACEAE

23. **Syzygium heyneanum** (Duthie) Wall. ex Gamble — A small tree, found frequently along nallahs, perennial ponds and banks of rivers. Fl. & Fr. : April-Sept.; Local name : Kath-Jammuni; RPST 1140.

15. LECYTHIDACEAE

24. **Barringtonia acutangula** (Linn.) Gaertn. — Found rarely in swampy areas and near riverbanks and *jhils*. Fl. & Fr. : May-Nov.; Local name : Sindaroukh; RPST 1248.

16. LYTHRACEAE

25. **Ammannia baccifera** Linn.—Found commonly in paddy fields and marshy depressions. Fl. & Fr. : Aug.-Dec.; RPST 623.
26. **A. multiflora** Roxb. — Occurs frequently in marshy places and paddy fields. Fl. & Fr. : Aug.-Nov.; RPST 348, 543.

17. ONAGRACEAE

27. **Ludwigia octovalvis** (Jacq.) Raven ssp. **sessiliflora** (Mich.) Raven — Found frequently in marshy areas. Fl. & Fr. : Oct.-Dec.; RPST 687.

28. **L. perennis** Linn. — Occurs commonly as a weed in damp and shady places. Fl. & Fr. : Sept.-Nov.; RPST 659.

18. TRAPACEAE

29. **Trapa natans** Linn. var. **bispinosa** (Roxb.) Makino— Commonly cultivated in *jhils* and ponds in the area. Fl. & Fr. : Aug-Nov.; Local Name : Singhara; RPST 283, 553.

19. MOLLUGINACEAE

30. **Glinus lotoides** Linn. — Occurs commonly in dried up ponds, puddles and in moist sandy places. Fl. & Fr. : April to Aug.; RPST 1083.
31. **G. oppositifolius** (Linn.) DC. — Found commonly on moist soil of fallow and cultivated fields. Fl. & Fr. : July-Sept.; RPST 432.
32. **Mollugo pentaphylla** Linn. — Found frequently in the area, mostly in damp, shady places; also found in agricultural fields. Fl. & Fr. : Aug.-Oct.; RPST 514.

20. APIACEAE

33. **Centella asiatica** (Linn.) Urban—Occurs commonly in moist shady places and along river banks. Fl. & Fr. : April-Aug.; Local name : Brahmi; RPST 1033.

21. RUBIACEAE

34. **Borreria articularis** (Linn. f.) F.N. Williams — Occurs commonly in marshy places. Fl. & Fr. : Aug.-Oct.; RPST 434.
35. **B. hispida** K. Schum. — Found commonly as a weed in cultivated and unused grounds on damp, sandy soil. Fl. & Fr. : Aug.-Oct.; RPST 412.

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36. **Oldenlandia corymbosa** Linn. — Occurs frequently in fields and waste places on moist ground. Fl. & Fr. : Sept.-Oct.; RPST 169, 658.
37. **O. nudicaulis** Roth — Found frequently in moist waste grounds. Fl. & Fr. : Aug.-Oct.; RPST 735.

22. ASTERACEAE

38. **Ageratum conyzoides** Linn. — Common along the banks of canals and irrigation channels. Fl. & Fr. : Nov.-June; RPST 103, 537.
39. **Caesulia axillaris** Roxb. — Found commonly in paddy fields and marshy places. Fl. & Fr. : Sept-April; RPST 119, 611.
40. **Eclipta prostrata** (Linn.) Linn. — Occurs commonly in marshes, swamps and riversides. Fl. & Fr. : Major Part of the year; Local name : Bhringraj; RPST 295, 738.
41. **Gnaphalium polycaulon** Pers. — Found frequently in moist, waste, shady places. Fl. & Fr. : Feb.-April; RPST 775.
42. **G. pulvinatum** Del. — Occurs commonly in moist, shady, waste places. Fl. & Fr. : Jan.-March; RPST 581.
43. **Grangea maderaspatana** (Linn.) Poir. — Found commonly in marshy places and along irrigation channels, puddles etc. Fl. & Fr. : Oct.-March; RPST 210.
44. **Xanthium strumarium** Linn. — Found commonly in the seasonal marshes of temporary pools. Fl. & Fr. : Sept.-June; Local name : Gokharu; RPST 559.

23. SPHENOCLEACEAE

45. **Sphenoclea zeylanica** Gaertn. — Found commonly in paddy fields and swampy areas. Fl. & Fr. : Aug.-Nov.; RPST 912.

24. MENYANTHACEAE

46. **Nymphoides cristata** (Roxb.) Kuntze — Found commonly in *jhils* and ponds, etc. Fl. & Fr. : Rainy season and early winter; RPST 663, 876.
47. **N. indica** (Linn.) Kuntze — Occurs commonly in *jhils*, ponds, etc. Fl. & Fr. : April-Oct.; RPST 872.

25. HYDROPHYLLACEAE

48. **Hydrolea zeylanica** (Linn.) Vahl—Occurs commonly as a weed in paddy fields and marshy places. Fl. & Fr. : Sept.-Dec.; RPST 918.

26. BORAGINACEAE

49. **Cynoglossum zeylanicum** (Hornem.) Thunb. ex Lehm. — Found occasionally on moist soil in wastelands. Fl. & Fr. : Oct.-Jan.; RPST 37.
50. **Heliotropium strigosum** Willd. — Found commonly on moist ground. Fl. & Fr. : July-March; RPST 436.

27. CONVULVULACEAE

51. **Ipomoea aquatica** Forsk. — Occurs commonly in ponds, pools, canals, ditches, muddy grounds and agricultural fields. Fl. & Fr. : Sept.-Feb.; Local name : Karamua, Nari ka saag; RPST 328.
52. **Volvulopsis nummularia** (Linn.) Roberty — Found frequently in muddy and moist places. Fl. & Fr. : August-February; Local name : Shankh-pushpi; RPST 527.

28. SOLANACEAE

53. **Physalis minima** Linn. — Found commonly in moist shady places and wastelands. Fl. & Fr. : July-Jan.; Local name : Jangli Makoiya; RPST 982.

54. **Solanum nigrum** Linn. — Occurs frequently in moist shady places. Fl. & Fr. : Most part of the year; Local name : Makoiya; RPST 1117.

29. SCROPHULARIACEAE

55. **Bacopa monnieri** (Linn.) Wettst. — Occurs commonly in marshy or wet places near canals, ponds and *jhils*. Fl. & Fr. : Aug.-Nov.; RPST 272.
56. **Linnophila indica** (Linn.) Druce — Found frequently in shallow ponds, pools and ditches. Fl. & Fr. : Sept.-Dec.; RPST 683.
57. **Lindernia anagallis** (Burm. f.) Penn. — Occurs commonly in marshy and swampy areas. Fl. & Fr. : Sept.-Dec.; RPST 660.
58. **L. ciliata** (Colsm.) Penn. — Found commonly in paddy fields near canals and irrigation channels. Fl. & Fr. : Sept.-Dec.; RPST 657, 979.
59. **L. crustacea** (Linn.) F. Muell. — Occurs commonly in paddy fields and moist situations. Fl. & Fr. : Sept.-Dec.; RPST 395, 513.
60. **Mazus delavayi** Bonati — Found occasionally in moist shady places. Fl. & Fr. : Sept.-Dec.; RPST 118.
61. **M. pumilus** (Burm. f.) Steen. — Occurs frequently in wet or damp, shady places and along the banks of canals. Fl. & Fr. : Sept.-Feb.; RPST 980.
62. **Striga angustifolia** (D. Don) Sald. — Found commonly near the banks of ponds and pools. Fl. & Fr. : Sept.-Nov.; RPST 538.
63. **Verbascum chinense** (Linn.) Sant. — Occurs commonly in moist, shady places along the banks of irrigation channels. Fl. & Fr. : Feb.-April; RPST 1012.

64. **Veronica anagallis-aquatica** Linn. — Occurs commonly in marshy places. Fl. & Fr. : Feb.-April; RPST 1013, 1048.

30. LENTIBULARIACEAE

65. **Utricularia stellaris** Linn. — An insectivorous, free floating plant; found commonly in ponds and pools. Fl. & Fr. : Sept.-Nov.; RPST 669, 890.
66. **U. flexuosa** Vahl — Found frequently in *jhils*, ponds and pools. Fl. & Fr. : Sept.-Jan.; RPST 858.

31. ACANTHACEAE

67. **Hygrophila auriculata** (Schum.) Heine — Found commonly in marshy places and near ponds and roadside ditches. Fl. & Fr. : Oct.-Dec.; RPST 624, 641.
68. **H. polysperma** (Roxb.) T. Anders. — Found commonly in marshy and swampy areas. Fl. & Fr. : Sept.-March; RPST 385.
69. **Rostellularia quinqueangularis** (Koenig ex Roxb.) var. **peploides** Nees — Found commonly in the ground vegetation of fruit orchards, on moist soil. Fl. & Fr. : Sept.-Feb.; RPST 379.

32. VERBENACEAE

70. **Phyla nodiflora** (Linn.) Greene — Occurs commonly in marshy places and along irrigation channels. Fl. & Fr. : April-Aug.; RPST 172, 375.

33. LAMIACEAE

71. **Anisomeles indica** (Linn.) Kuntze — Found commonly on moist soil of orchards or along canal banks. Fl. & Fr. : Sept.-Feb.; RPST 592, 674.
72. **Salvia plebeia** R. Br. — Occurs commonly in moist places. Fl. & Fr. : Sept.-April; RPST 774, 1069.

## 34. AMARANTHACEAE

73. **Alternanthera paronychioides** St. Hill. — Occurs commonly in marshy places. Fl. & Fr. : throughout the year; RPST 344.
74. **A. sessilis** (Linn.) R. Br. ex DC. — Occurs commonly in moist situations. Fl. & Fr. : Throughout the year; RPST 110, 579.

## 35. CHENOPODIACEAE

75. **Chenopodium ambrosioides** Linn. — Found commonly in moist localities. Fl. & Fr. : March-Sept.; RPST 796.

## 36. POLYGONACEAE

76. **Polygonum barbatum** Linn. ssp. **gracile** Danser — Found commonly in marshes and along canal banks. Fl. & Fr. : Sept.-March; RPST 133.
77. **P. glabrum** Willd. — Found commonly in marshes and along canal banks. Fl. & Fr. : Sept.-March; RPST 116.
78. **P. plebeium** R. Br. — Occurs commonly in moist shady places. Fl. & Fr. : Aug.-April; RPST 120, 737.
79. **Rumex dentatus** Linn. — Found commonly in marshy places and along river banks. Fl. & Fr. : Dec-June; RPST 112, 821.

## 37. EUPHORBIACEAE

80. **Euphorbia geniculata** Orteg. — Found commonly in moist shady places. Fl. & Fr. : Dec.-April; RPST 1141.
81. **E. hypericifolia** Linn. — Occurs commonly along river banks and in waste lands in moist situations. Fl. & Fr. : May-Oct; RPST 365.
82. **Kirganelia reticulata** (Poir.) Baill. — Occurs commonly along irrigation channels and in marshy areas. Fl. & Fr. : April-July; RPST 515.

83. **Trewia polycarpa** Benth. — Occurs commonly in marshy places along river beds. Fl. & Fr. : Feb.-April; RPST 191.

## 38. URTICACEAE

84. **Fleurya interrupta** (Linn.) Gaud.—Found occasionally in damp, wet places near orchards. Fl. & Fr. : Sept.-Nov.; RPST 997.

## 39. CERATOPHYLLACEAE

85. **Ceratophyllum demersum** Linn.—Occurs commonly in rivers, *jhils* and ponds. Fl. & Fr. : Sept.-Nov.; RPST 664.

## MONOCOTYLEDONS

## 40. HYDROCHARITACEAE

86. **Hydrilla verticillata** (Linn. f.) Royle — Found abundantly in ponds and ditches. Fl. & Fr. : Sept.-Nov.; RPST 859.
87. **Ottelia alismoides** (Linn.) Pers. — Found commonly in ponds, pools and roadside ditches. Fl. & Fr. : Sept.-Dec.; RPST 661.
88. **Nechamandra alternifolia** (Roxb.) Thw. — Occurs commonly in ponds, pools and ditches. Fl. & Fr. : Sept.-Oct.; RPST 864.
89. **Vallisneria spiralis** Linn. — Found frequently in ponds, pools and shallow-river ditches. Fl. & Fr. : Oct-Feb.; RPST 143.

## 41. ORCHIDACEAE

90. **Zeuxine strateumatica** (Linn.) Schl. — Occurs rarely in moist turfy banks of canals. Fl. & Fr. : Feb.-March; RPST 750.

## 42. AMARYLLIDACEAE

91. **Crinum defixum** Ker-Gawler — Occurs commonly in swamps, along streams and ponds. Fl. & Fr. : June-Oct.; Local name : Kalakandera; RPST 1279.

43. LILIACEAE

92. **Asparagus racemosus** Willd. — Found commonly in moist waste places. Fl. & Fr. : Nov.-Jan.; Local name : Satawar; RPST 1039.

44. PONTEDERACEAE

93. **Eichhornia crassipes** (Mart.) Solms — Found commonly in *jhils*, ponds and pools forming dense patches. Fl. & Fr. : Aug.-Nov.; Local name : Jal Kumbhi; RPST 550.
94. **Monochoria vaginalis** (Burm. f.) Presl— Occurs commonly in marshes and roadside ditches. Fl. & Fr. : Sept.-Nov.; PRST 851.

45. COMMELINACEAE

95. **Amischophacelus axillaris** (Linn.) R. & K. — Found commonly in damp, swampy soils of waste lands. Fl. & Fr. : Aug.-Dec.; RPST 874.
96. **Commelina benghalensis** Linn. — Found commonly in marshes and along canal banks. Fl. & Fr. : Aug.-Nov.; RPST 552, 976.
97. **Murdannia nudiflora** (Linn.) Brenan — Occurs frequently in moist soil of cultivated fields. Fl. & Fr. : Aug.-Nov.; RPST 345.

46. TYPHACEAE

98. **Typha angustata** Bory & Chaub. — Found commonly in marshes and swamps. Fl. & Fr. : May-Nov.; Local name : Gondi; RPST 665.

47. ARACEAE

99. **Pistia stratiotes** Linn. — Occurs rarely in still water of pools and ditches. Fl. & Fr. : Aug-Nov.; RPST 327.

48. LEMNACEAE

100. **Lemna paucicostata** Hegelm. — Occurs frequently in ponds and ditches. RPST 843.
101. **Spirodela polyrrhiza** (Linn.) Schleid. — Found commonly in still water of ponds and ditches. RPST 842.
102. **Wolffia arrhiza** (Linn.) Horkel ex Wimm. — Found occasionally in ponds and ditches. RPST 836.

49. ALISMATACEAE

103. **Sagittaria guayanensis** H. B. & K. ssp. **lappula** (D. Don). Bogin — Found commonly in ponds, pools and roadside ditches; also seen in flooded paddy fields. Fl. & Fr. : Aug.-Dec.; RPST 840, 877.
104. **S. trifolia** Linn. — Found occasionally in marshy places. Fl. & Fr. : Sept.-Dec.; RPST 988.

50. APONOGETONACEAE

105. **Aponogeton natans** (Linn.) Engl. & Krause — Found rarely in still water of roadside pools and ditches. Fl. & Fr. : Aug-Dec.; RPST 844.

51. POTAMOGETONACEAE

106. **Potamogeton crispus** Linn. — Found frequently in shallow, temporary water ponds and pools. Fl. & Fr. : Dec.-April; RPST 1034.
107. **P. nodosus** Poir. — Found commonly in ponds and ditches. Fl. & Fr. : Nov.-Dec.; RPST 946.
108. **P. pectinatus** Linn. — Occurs commonly in ponds and pools etc. Fl. & Fr. : Oct.-April; RPST 1036.



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52. ERIOCAULACEAE

109. *Eriocaulon cinereum* R. Br. — Found commonly in marshy places and paddy fields. Fl. & Fr. : Sept-Dec.; RPST 999.

53. CYPERACEAE

110. *Cyperus alopecuroides* Rottb. — Found commonly along the banks of streams and other irrigation channels. Fl. & Fr. : Aug.-Nov.; RPST 253.
111. *C. alulatus* Kern — Found commonly in paddy fields and other marshy places. Fl. & Fr. : Sept.-Nov.; RPST 362.
112. *C. brevifolius* (Rottb.) Hassk. — Found frequently in marshy and muddy places. Fl. & Fr. : July-Oct.; RPST 339.
113. *C. compactus* Retz. — Found commonly in marshy places. Fl. & Fr. : Aug.-Nov.; RPST 616.
114. *C. compressus* Linn. — Occurs commonly in marshy places. Fl. & Fr. : Aug.-Nov.; RPST 464.
115. *C. difformis* Linn. — Occurs commonly in swampy and marshy places. Fl. & Fr. : Aug.-Dec.; RPST 335, 625.
116. *C. digitatus* Roxb. — Occurs commonly in paddy fields and swampy areas. Fl. & Fr. : Aug.-Dec.; RPST 952.
117. *C. exaltatus* Retz. — Found frequently in marshy places. Fl. & Fr. : Aug.-Dec.; RPST 274.
118. *C. iria* Linn. — Found commonly in paddy fields and other marshy places. Fl. & Fr. : Aug.-Nov.; RPST 547.
119. *C. kyllingia* Endl. — Found commonly in paddy fields and other marshy places. Fl. & Fr. : Aug.-March; RPST 354.
120. *C. rotundus* Linn. — Found commonly in paddy fields and other swampy areas in open grasslands. Fl. & Fr. : July-Dec.; RPST 361, 549.

121. *C. triceps* (Rottb.) Endl. — Occurs commonly in marshy places. Fl. & Fr. : Aug.-March; RPST 138.
122. *Eleocharis atropurpurea* (Retz.) Kunth— Occurs commonly in paddy fields and other marshy places. Fl. & Fr. : Sept.-Dec.; RPST 122.
123. *Fimbristylis bisumbellata* (Forsk.) Bub. — Found commonly as a weed in paddy fields and swampy localities. Fl. & Fr. : Nov.-May; RPST 271, 626.
124. *F. falcata* (Vahl) Kunth — Occurs commonly in grasslands and river beds. Fl. & Fr. : Sept.-Dec.; RPST 423.
125. *F. littoralis* Gaud. — Found commonly in paddy fields and marshy areas. Fl. & Fr. : Sept.-Dec.; RPST 545.
126. *F. miliacea* (Linn.) Vahl—Occurs commonly in paddy fields and marshy areas. Fl. & Fr. : Aug.-Nov.; RPST 376.
127. *F. ovata* (Burm.) Kern — Found commonly in cultivated fields. Fl. & Fr. : Aug.-Dec.; RPST 291, 354.
128. *Scirpus articulatus* Linn. — Found commonly in paddy fields and marshy areas. Fl. & Fr. : Sept.-Nov.; RPST 130, 898, 1082.
129. *S. mucronatus* Linn. — Found occasionally in marshy areas. Fl. & Fr. : Sept.-Dec.; RPST 222.
130. *S. squarrosus* Linn. — Found commonly in paddy fields after harvest. Fl. & Fr. : Oct.-Dec.; RPST 378.
131. *S. tuberosus* Desf. — Found commonly in paddy fields and marshy areas. Fl. & Fr. : Sept.-Dec.; RPST 333.

54. POACEAE

132. *Arundo donax* Linn. — Found frequently along ditches and streams. Fl. & Fr. : Sept.-Feb.; RPST 972.

133. **Brachiaria reptans** (Linn.) Gardn. & Hubb. — Found frequently in marshy places. Fl. & Fr. : Sept.-Jan.; RPST 533.
134. **Coix lacryma-jobi** Linn. — Found commonly in moist soil near irrigation canals. Fl. & Fr. : Sept.-Feb.; RPST 273.
135. **Echinochloa colonum** (Linn.) Link — Found commonly in paddy fields and other marshy places. Fl. & Fr. : July-Nov.; RPST 304, 360.
136. **E. crusgalli** (Linn.) Beauv. — Occurs commonly in paddy fields and swampy areas near ponds and pools. Fl. & Fr. : Aug.-Nov.; RPST 338.
137. **Eragrostis tenella** (Linn.) P. Beauv. ex Roem. & Schult. — Found commonly on moist soil near ponds and pools. Fl. & Fr. : Aug.-Dec.; RPST 387, 531.
138. **Imperata cylindrica** (Linn.) Beauv. — Found commonly in open fields on moist ground. Fl. & Fr. : June-Oct.; RPST 156, 252, 451.
139. **Ischaemum rugosum** Salisb. — Found commonly in paddy fields and near ponds and pools. Fl. & Fr. : Sept-Dec.; RPST 539.
140. **Oryza rufipogon** Griff. — Occurs commonly in marshy places. Fl. & Fr. : Oct.-Nov.; Local name : Tinna, Pasai; RPST 38.
141. **Paspalum distichum** Linn. — Occurs commonly in marshy places and paddy fields. Fl. & Fr. : July-Sept.; RPST 341.
142. **Perotis indica** (Linn.) Kuntze — Found commonly in damp, shady places near ponds and pools. Fl. & Fr. : July-Nov.; RPST 981.
143. **Phragmites maxima** (Forrsk.) Blatt. & McC.— Occurs commonly in marshy places along streams. Fl. & Fr. : Oct.-Jan.; RPST 957.
144. **Saccharum bengalense** Retz. — Found frequently in marshy places and on the bunds of fields. Fl. & Fr. : Sept.-Nov.; Local name : Munj; RPST 39.
145. **S. spontaneum** Linn. — Found frequently along river banks in swampy areas and on the bunds of fields. Fl. & Fr. : Sept.-Jan.; RPST 332.
146. **Sorghum halepense** (Linn.) Pers. — Found commonly along the irrigation channels. Fl. & Fr. : Sept-Dec.; RPST 734.
147. **Vetiveria zizanioides** (Linn.) Nash — Occurs commonly in marshy places. Fl. & Fr. : July-Nov.; Local name : Seenk, khas; RPST 366, 684.

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#### REFERENCES

Biswas, K. & Calder, C. (1937): Handbook of common water and marshy plants of India and Burma. Government Press, Delhi.

Duthie, J. F. (Rep. ed. 1973): Flora of the Upper Gangetic Plain and of the adjacent Siwalik and Sub-Himalayan tracts. Vols. 1-3.